REMARKS

Upon entry of the amendments, claims 1-3 and 5-39 are pending in this application with claims 2, 3, and 8-35 withdrawn in response to Examiner's earlier restriction requirement. Claims 1 and 4-7 were examined to the extent that they read on the elected decarbamylase crystal having space groups $P2_12_12_1$ and SEQ ID NO: 2.

In view of Examiner's earlier restriction requirement, Claim 1 is amended to be drawn to the elected decarbamylase crystal having space groups $P2_12_12_1$ and SEQ ID NO: 2. Additionally, claim 1 is amended to recite the unit cell dimensions of the decarbamylase crystal as having a rectangular parallelepiped form with lattice constants: a=81.5-82.5 A, b=l33.0-135.0 A, and c=119.5-121.5 A.

Claim 4 is canceled and new claims 36-39 are added in this amendment. Support for new claim 36 can be found in PCT claim 8 of the present application, and support for new claims 37-39 can be found in pending claims 4-7.

Information Disclosure Statement

In response to Examiner's objection that the copy of the Hilgenfeld *et al.* reference was incomplete, Applicant(s) submit a complete copy of this reference, along with a new IDS.

Compliance with Sequence Rules

In response to Examiner's objection that Table 1 (p. 25) does not refer to any particular sequence identification, the title of Table 1 is amended to refer to SEQ ID NO: 1.

Amendments to Specification

In response to Examiner's objection that the title of the invention is not sufficiently descriptive, and in accordance with Examiner's suggestion, the title is amended to indicate that *Agrobacterium* sp. is the source of the decarbamylase to which the claims are directed.

In response to Examiner's objection that the abstract of the disclosure does not completely describe the disclosed subject matter, and in accordance with Examiner's suggestion, the specific source of the decarbamylase (*Agrobacterium* sp. KNK712 produced by an *E. Coli* expression system) is included in the abstract.

In response to Examiner's objection that Table 4 fails to refer to any particular sequence identification, the title of Table 4 is amended to refer to SEQ ID NO: 1.

Claim Rejection -- § 112, written description

Claims 1 and 5-7 were rejected under 35 U.S.C. § 112, first paragraph, as lacking an adequate written description because the claims were drawn to crystals having unspecified unit cell dimensions. Claim 1 is amended to now recite the specific unit cell dimensions of the decarbamylase crystal. Claims 5-7, by virtue of their dependency on claim 1, recite the specific unit cell dimensions of the decarbamylase crystal. For at least these reasons, Applicant(s) submit that amended claims 1 and 5-7 are now sufficiently supported by the disclosure, and respectfully request that the § 112, first paragraph, written description rejection of claims 1 and 5-7 be withdrawn.

Claim Rejection -- § 112, enablement

Claims 1 and 4-7 were rejected under 35 U.S.C. § 112, first paragraph, for lack of enablement in making crystals of the mutant decarbamylase with space groups $P2_12_12_1$ and SEQ ID NO: 2. Applicant(s) respectfully traverse the rejection. Enablement is not precluded because some experimentation is necessary to determine how to make and use the invention. Here, experimentation is not unduly extensive because Applicant(s) have disclosed a working example for making crystals of the wild-type decarbamylase of SEQ ID NO: 1. Based on this working example, one of skill in the art could easily predict how to make crystals of the mutant decarbamylase of SEQ ID NO: 2.

First, the wild-type decarbamylase of SEQ ID NO:1 and the mutant decarbamylase of SEQ ID NO: 2 have nearly identical primary structure. As Examiner has noted, the two enzymes have 99.1% identity in amino acid sequence. Specifically, there are only three changes in the amino acid sequence of the wild-type decarbamylase: His57→Tyr, Pro203→Glu, and Val236→Ala.

Second, the decarbamylase of SEQ ID NO: 1 and the decarbamylase of SEQ ID NO: 2 have substantially the same secondary structure by virtue of their nearly identical primary structure. Furthermore, the three mutations in the mutant decarbamylase do not occur within any of the α-helix or β-sheet structural units of the wild-type decarbamylase as shown in Table 1 (p. 25).

Therefore, there is no undue experimentation because one skilled in the art could reasonably predict that the method of forming crystals of the wild-type decarbamylase of SEQ ID NO: 1 can be modified to apply to the mutant decarbamylase comprising an amino acid sequence of SEQ ID NO: 2. The skill in the art is relatively high and the scope of the claims are narrow, involving only crystals of the mutant decarbamylase comprising the amino acid sequence of SEQ ID NO: 2. For at least these reasons, Applicant(s) respectfully request that the lack of enablement rejection be withdrawn.

CONCLUSION

Applicant(s) respectfully submit that the present application is now in condition for allowance. The Examiner is invited to contact Applicant(s)'s representative to discuss any issue that would expedite allowance of this application.

No extensions of time or other fees are required in connection with the filing of this response. However, in case the filing of this paper is deemed not timely, Applicant(s) petition for an appropriate extension of time. The Commissioner is authorized to charge all required fees, fees under § 1.17, or all required extension of time fees, or to credit any overpayment to Kenyon & Kenyon's Deposit Account No. 11-0600.

Respectfully submitted,

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